

# SPECIFICATION

Electronic Version 1.2.8

Stylesheet Version 1.0

## PICTURE DISPLAY TOOTHBRUSH

### Background of Invention

[0001] 1. Field of the Invention

[0002] The present invention relates to a toothbrush having a display portion for displaying an object, and in particular, for displaying a picture or photograph.

[0003] 2. Background Art

[0004] It has long been known that regular tooth brushing is an effective way to help prevent tooth decay and gum disease. Despite the obvious benefits of a regular brushing regime, strict adherence to the regime is not always achieved, especially among children. There have been a number of attempts to increase compliance with a brushing regime, for example, by configuring a toothbrush with an aesthetically pleasing appearance. One such toothbrush is described in U.S. Pat. App. Pub. No. 20010002605 (Morawski et al.), published on June 7, 2001. Morawski et al. describes a toothbrush having a decorated handle, the decorative pattern being applied to the handle via a heat-shrinkable plastic film. The desired pattern is printed on the inside surface of clear heat-shrinkable plastic film, which is then applied to the handle.

[0005] One limitation of Morawski et al. is that the decorative patterns available to the consumer are dictated by the toothbrush manufacturer. The patterns are transferred onto the clear film, and the film is applied to the toothbrush handle, prior to the toothbrush reaching the retail facility. Thus, the consumer may wish to have a toothbrush that includes a particular picture, a particular design, or a particular photograph, but is limited in choices to those provided by the toothbrush manufacturer. The availability of a limited number of patterns may also make

identification of toothbrushes in multi-person households difficult. In addition, the decorative pattern on the Morawski et al. toothbrush is not easily changed by the consumer; hence, if a child becomes uninterested with a particular pattern, the solution may require the purchase of a new toothbrush.

[0006] Accordingly, it is desirable to provide a toothbrush that can be configured with a pattern, picture, or photograph of the consumer's choice, so as to make the toothbrush aesthetically pleasing and uniquely identifiable, and to provide a toothbrush that allows for the pattern, picture, or photograph to be easily changed, thereby helping to maintain a user's interest in the toothbrush, particularly in the case of a child's toothbrush.

## Summary of Invention

[0007] One aspect of the invention provides a toothbrush that facilitates attachment to the toothbrush of a pattern, picture, or photograph of a user's choice, thereby enhancing the brushing experience and helping to promote good brushing habits.

[0008] Another aspect of the invention provides a toothbrush that can be configured with a chosen pattern, picture, or photograph, so as to uniquely identify the toothbrush as belonging to a particular user.

[0009] Yet another aspect of the invention provides a toothbrush that facilitates easy replacement of an existing pattern, picture, or photograph, with another, thereby helping to maintain a user's interest in the toothbrush.

[0010] Accordingly, a toothbrush is provided that comprises a toothbrush body, including a toothbrush handle and a brush head. The toothbrush also includes an object housing, configured to be attached to the toothbrush body. The object housing is configured to selectively house an object to be displayed, and it includes a translucent portion for providing visual access to the object to be displayed.

[0011] Another aspect of the invention provides a toothbrush that comprises a toothbrush body, including a toothbrush handle and a brush head. The toothbrush further includes a visual access structure that is configured for attachment to the toothbrush body. The visual access structure is configured to selectively receive, and

to provide visual access to, an object to be displayed.

[0012] Yet another aspect of the invention provides a toothbrush that comprises a toothbrush handle with a brush head attached thereto. The toothbrush further comprises a display window configured for attachment to the toothbrush handle, and configured for selectively receiving and translucently covering an object to be displayed.

[0013] The above object and other objects, features, and advantages of the present invention are readily apparent from the following detailed description of the best modes for carrying out the invention when taken in connection with the accompanying drawings.

### **Brief Description of Drawings**

[0014] FIGURE 1 is a perspective view of a toothbrush in accordance with the present invention;

[0015] FIGURE 2 is a perspective view of a brush head cap for use with a toothbrush such as the one shown in Figure 1;

[0016] FIGURE 3 is a perspective view of an alternative embodiment toothbrush having an end cap attached to the distal end of the toothbrush handle;

[0017] FIGURE 4 is a perspective view of an end cap for use with a toothbrush such as the one shown in Figure 3;

[0018] FIGURE 5 is a perspective view of a third toothbrush embodiment having an object housing integral with the toothbrush handle;

[0019] FIGURE 6 is a partially exploded perspective view of a fourth toothbrush embodiment in accordance with the present invention;

[0020] FIGURE 7 is an assembled perspective view of the toothbrush shown in Figure 6;

[0021] FIGURE 8 is a perspective view of a fifth toothbrush embodiment including a folding handle portion;

[0022] FIGURE 9 is a perspective view of the toothbrush in Figure 8 having the folding

handle portion in an open position;

[0023] FIGURE 10 is a perspective view of a motorized electric toothbrush in accordance with the present invention; and

[0024] FIGURE 11 is a perspective view of an alternative embodiment of a motorized electric toothbrush in accordance with the present invention.

## Detailed Description

[0025] Figure 1 shows a toothbrush 10 in accordance with the present invention. The toothbrush 10 includes a toothbrush body 12 having a toothbrush handle 14 and a brush head 16. The toothbrush 10 also includes an object housing, or visual access structure, which in the embodiment shown in Figure 1, is a brush head cap 18. The brush head cap 18 is configured to snap onto the toothbrush body 12 to cover 20 on the brush head 16. The brush head cap 18 is thus selectively attachable to and detachable from the toothbrush body 12, such that the bristles 20 can be covered when the toothbrush 10 is not in use.

[0026] Included in the brush head cap 18 is a translucent portion, which is shown in Figure 1 as a display window 22. The display window 22 is conveniently made from a clear acrylic, though other suitable materials, including those having some color, can be used. The convex shape of the display window 22 provides a space for a user to house an object to be displayed within the brush head cap 18, and yet provides visual access to the object to be displayed. The user has the option of choosing what object is to be displayed within the brush head cap 18, and of choosing when to replace it with a new object. For example, Figure 2 shows an alternative embodiment 24 of a brush head cap. The brush head cap 24 contains a photograph 26 that is visible through a convex display window 28. Displaying a photograph, such as the photograph 26, allows a toothbrush to be individualized to a particular user. This reduces the likelihood of mixing up toothbrushes in a multiple-user household. Moreover, including a photograph in a toothbrush enhances its visual appeal and may encourage good brushing habits.

[0027] Returning to Figure 1, it is seen that the brush head cap 18 includes an opening 30 that not only accommodates the bristles 20 of the brush head 16, but also allows a

user access to a back side 32 of the display window 22. Thus, the user may easily insert a picture or photograph into the brush head cap 18. In this way, different objects, including pictures and photographs, can be selectively placed in the brush head cap to alter its appearance. This eliminates the need to purchase a new toothbrush each time an appearance change is desired. Should a user desire additional personalization, the brush head cap itself may be varied. For example, the brush head caps 18, 24 are each configured with a different flower design. By choosing toothbrushes having different brush head caps, and by inserting different pictures or photographs into them, a user has virtually unlimited choices in customizing the toothbrush.

[0028] Figure 3 shows an alternative embodiment 34 of a toothbrush in accordance with the present invention. The toothbrush 34 includes a toothbrush body 36 having a toothbrush handle 38 and a brush head 40. An object housing, shown in Figure 3 as an end cap 42, is configured for attachment to a distal end 44 of the toothbrush handle 38. The end cap 42 includes a translucent portion, or display window 46. Similar to a brush head cap, the end cap 42 is configured to receive an object such as a picture or photograph, and to provide visual access to the object through the display window 46. For example, in Figure 3, a photograph 48 is disposed behind the display window 46.

[0029] The end cap 42 is configured to look like a basketball, which enhances the visual appeal of the toothbrush 34. In order to preserve the spherical shape of the end cap 42, and thus more closely resemble a real ball, the display window 46 may be convex, having a radius that matches the radius of the end cap 42. Moreover, the end cap 42 can be configured such that the display window 46 is selectively removable to provide access to the photograph 48. This eliminates the need for an additional opening in the end cap 42, thereby helping to maintain the overall spherical contour. In addition, a convex display window may have a complementary concavity on a side opposite the convex side. The concavity can be configured to receive an object such as a picture or photograph, thereby eliminating the need to provide additional space within the end cap. Of course, an end cap can be configured with an opening on a side opposite the display window, thereby allowing a display window to be more permanently attached to the end cap.

[0030] In addition to replacing the picture or photograph in an end cap, such as the end cap 42, the overall look of a toothbrush can be varied by providing a differently configured end cap. For example, Figure 4 illustrates an end cap 50 having a display window 52, behind which is disposed a photograph 54. The end cap 50 is configured to resemble a baseball, though other end caps may be configured to resemble volleyballs, soccer balls, or the like. In addition, end caps may have other configurations, such that they resemble flowers, birds, animals, or even cartoon characters. In this way, a user has many options available with regard to customizing toothbrush. The end cap 50 contains an aperture 56 for facilitating attachment to a toothbrush handle, such as the toothbrush handle 38 of the toothbrush 34 shown in Figure 3. An aperture, such as the aperture 56, may be tapered or threaded to mate with a distal end of a toothbrush handle.

[0031] The toothbrushes 10, 34 shown in Figures 1 and 3, respectively, each have object housings that are selectively attachable to and detachable from their respective toothbrush bodies 12, 36. As an alternative, an object housing, or visual access structure, may be integral with a toothbrush body. For example, Figure 5 shows a toothbrush 58, including a toothbrush body 60 having a toothbrush handle 62 and a brush head 64. Integral with the toothbrush body 60 is an object housing 66. The object housing 66 is disposed near a distal end 68 of the toothbrush handle 62, and includes a convex display window 70. The display window 70 is configured to receive an object such as a picture or photograph, and is translucent to provide visual access to the object after it is received by the display window. A portion of the toothbrush body 60 is molded with a decorative design which complements the object housing 66. Of course, toothbrushes can be configured with different decorative designs, thereby allowing a user additional choices in customizing the toothbrush.

[0032] Figure 6 shows a partially exploded view of another embodiment 72 of a toothbrush having an object housing 74 integral with a toothbrush body 76. The object housing 74 includes a cylindrical translucent portion 78 having an open end 80 for receiving an object to be displayed, in this case a photograph 82. The photograph 82 is conveniently rolled to conform to the shape of the cylindrical translucent portion 78 of the object housing 74. After it is rolled, the photograph 82 can be placed inside the object housing 74, and a cap 84 placed over the open end 80. Figure 7 shows the



embodiments of motorized electric toothbrushes. For example, the brush head cap 18, shown in Figure 1, is easily configured to work with a motorized electric toothbrush, such as the toothbrush 104 shown in Figure 10.

[0036] Figure 11 shows another motorized electric toothbrush 118 in accordance with the present invention. The toothbrush 118 includes a toothbrush handle 120 and a brush head 122. Integral with the toothbrush handle 120, is an object housing 124. The object housing 124 includes a translucent convex display window 126 that can be readily detached to allow a user to insert an object behind it. As with the embodiments described above, the toothbrush 118 can be easily customized by inserting a particular object, such as a personal photograph, behind the display window 126. In addition, the object housing itself, shown as a fighter jet in Figure 11, may have different configurations to provide a further means by which a user can customize the toothbrush.

[0037] While embodiments of the invention have been illustrated and described, it is not intended that these embodiments illustrate and describe all possible forms of the invention. Rather, the words used in the specification are words of description rather than limitation, and it is understood that various changes may be made without departing from the spirit and scope of the invention.